CLAIMS

1 Pressing plunger mechanism (1) of a glassware forming machine (2),

having at least one pressing plunger (72) which in normal operation can be moved axially in a reciprocating manner together with a pressing plunger receiver (71) between an inoperative position and a pressing position,

wherein a piston rod (60; 61) of a piston (58; 59) is fastened to each pressing plunger receiver (71),

wherein each piston (58; 59) can be displaced in a cylinder (56; 57) of a pressing plunger holder (45; 46),

wherein a piston surface (74) facing away from the pressing plunger (72) is acted upon by a compressed fluid (83),

and wherein the pressing plunger holder (45; 46) can be moved axially in a reciprocating manner by a first drive (9),

characterized in that the pressing plunger holder (45; 46) is connected in a non-rotatable manner to a threaded spindle (17),

that a nut (21) which can be rotationally driven by the first drive (9) is engaged with the threaded spindle (17),

that the nut (21) is coupled (see 19) to a driven shaft (15) of an angular gear (14),

and that an input shaft (13) of the angular gear (14) can be rotationally driven by an electric servo motor (10) of the first drive (9).

2 Pressing plunger mechanism as claimed in claim 1,

characterized in that a play-free elastic coupling (12) is connected in between the electric servo motor (10) and the input shaft (13) of the angular gear (14).

3 Pressing plunger mechanism as claimed in claim 1 or 2,

characterized in that the driven shaft (15) of the angular gear (14) is disposed coaxially with the threaded spindle (17),

and that the driven shaft (15) has a concentric space (18) which receives a free end (16) of the threaded spindle (17) with radial clearance all around.

4 Pressing plunger mechanism as claimed in any one of claims 1 to 3,

characterized in that when the pressing plunger mechanism (1) has a plurality of pressing plungers (72) all pressing plunger holders (45, 46) are fastened to a common traverse (24),

and that the traverse (24) is connected in a non-rotatable manner to the threaded spindle (17).

5 Pressing plunger mechanism as claimed in any one of claims 1 to 4,

characterized in that each pressing plunger (72) and its pressing plunger receiver (71) can be coupled to each other by a longitudinally divided split ring (73),

that the closed split ring (73) is supported in the radial direction by a support cylinder (47; 48),

that each support cylinder (47; 48) is fastened to a first housing (8),

and that the angular gear (14) and the electric servo motor (10) of the first drive (9) are also fastened to the first housing (8).

6 Pressing plunger mechanism as claimed in claim 5,

characterized in that a displacement pick-up (75) is also fastened to the first housing (8) in parallel with the piston rod (60; 61),

that an actuating element (76) for the displacement pick-up (75) is fastened to the piston rod (60; 61),

and that by means of the displacement pick-up (75) electrical signals corresponding to the axial position of the associated pressing plunger (72) can be input into an evaluation circuit (77).

7 Pressing plunger mechanism as claimed in any one of claims 1 to 6,

characterized in that a radially extending collar (64; 65) is fastened to each piston rod (60; 61),

and that the collar (64; 65) engages, by means of an axially parallel orifice (66), around an axially parallel pin (67) of the pressing plunger holder (45; 46).

8 Pressing plunger mechanism as claimed in claim 7,

characterized in that the actuating element (76) for the displacement pick-up (75) is fastened to the collar (64; 65).

9 Pressing plunger mechanism as claimed in any one of claims 5 to 8,

characterized in that the first housing (8) can be adjusted by a second drive (39), which is supported firmly on the machine, in parallel with a longitudinal axis (69) of the at least one pressing plunger (72).

10 Pressing plunger mechanism as claimed in claim 9,

characterized in that, on its end facing away from the at least one pressing plunger (72), the first housing (8) has a projection (34) provided with an outer thread (33),

that an inner thread (36) of an axially fixed toothed ring (37) of the second drive (39) is engaged with the outer thread (33),

and that a toothed wheel (38) of the second drive (39) meshes with the toothed ring (37).

11 Pressing plunger mechanism as claimed in claim 10,

characterized in that the toothed wheel (38) can be rotationally driven in a reciprocating manner by a worm gear (41).

12 Pressing plunger mechanism as claimed in any one of claims 9 to 11,

characterized in that the second drive (39) is mounted on a second housing (31) which is fixed on the machine,

that the second housing (31) extends as far as the at least one support cylinder (47; 48),

and that each axial position of the first housing (8), which is adjusted by the second drive (39), can be fixed by a clamping device (52) which is fastened to the second housing (31) and cooperates with the at least one support cylinder (47; 48).

13 Pressing plunger mechanism as claimed in claim 12,

characterized in that the first housing (8) is disposed inside the second housing (31).

14 Pressing plunger mechanism as claimed in claim 12 or 13,

characterized in that two guide rods (27, 28), which are disposed at a lateral spaced disposition from each other, are fastened to the second housing (31) in parallel with the longitudinal axis (69) of the at least one pressing plunger (72),

that the traverse (24) can be displaced by means of guide bushings (25, 26) on the guide rods (27, 28),

and that the first housing (8) can be displaced by means of guide bushings (29, 30) on the guide rods (27, 28).

15 Pressing plunger mechanism as claimed in any one of claims 12 to 14,

characterized in that in parallel with the longitudinal axis (69) of the at least one pressing plunger (72) at least one supply pipe (80; 81) for pressing plunger cooling air (82) and for the compressed fluid (83) is fastened to a region of the second housing (31) facing away from the at least one pressing plunger (72),

and that a telescopic pipe (84; 85), which is fastened to the traverse (24), passes into each supply pipe (80; 81) in a sealed manner.

16 Pressing plunger mechanism as claimed in claim 15,

characterized in that the at least one supply pipe (80; 81) and the at least one telescopic pipe (84; 85) are disposed between the guide rods (27; 28).